

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method of treating the human body, the method comprising:
producing electromagnetic radiation;
~~passing selecting the electromagnetic radiation through a graded index optical fiber, the graded index optical fiber having a pre-determined graded index core profile and a pre-determined length selected to modify the electromagnetic radiation to a modified output electromagnetic radiation having an intensity distribution including one of a substantially Gaussian intensity distribution, a substantially bell curve shaped intensity distribution, a substantially parabolic intensity distribution and a substantially Lorentzian intensity distribution; the graded index optical fiber outputting the modified electromagnetic radiation; and~~
~~coupling the electromagnetic radiation to the selected graded index optical fiber to control a resultant intensity distribution to be applied to the human body by modifying the coupled electromagnetic radiation based on the pre-determined graded index and the pre-determined length of the optical fiber; and~~
applying the modified laser beam outputted by the graded index optical fiber to the human body.
2. (Original) The method of claim 1 wherein said electromagnetic radiation is a laser beam.
3. (Original) The method of claim 2 wherein the laser beam has a wavelength of approximately 2.1 μm .
4. (Original) The method of claim 2 wherein the laser beam has a wavelength of approximately 1.06 μm .
5. (Original) The method of claim 1 comprising producing a laser beam by a CTH:YAG laser generator.

6. (Original) The method of claim 1 comprising producing a laser beam by a Ho:Yag laser generator.
7. (Original) The method of claim 1 wherein the modified electromagnetic radiation is applied directly to the human body.
8. (Original) The method of claim 7 comprising ablating the human tissue.
9. (Original) The method of claim 7 comprising cutting the human tissue.
10. (Original) The method of claim 1 comprising passing the electromagnetic radiation through a light guide.
11. (Original) The method of claim 1 comprising passing the electromagnetic radiation through a second optical fiber.
12. (Original) The method of claim 1 comprising passing the electromagnetic radiation through a lens.
13. (Cancelled)
14. (Cancelled)
15. (Currently amended) The method of claim 1 wherein the modified electromagnetic radiation has an intensity profile which is more rounded than that of the laser-beam electromagnetic radiation input to the fiber such that the intensity profile of the modified electromagnetic radiation is larger at positions closer to the center of the fiber than at positions farther from the center of the fiber.
16. (Original) The method of claim 1 wherein the optical fiber has a core diameter of approximately between 150 and 1000 micrometers.
17. (Currently amended) A method of treating the human body, the method comprising:

producing an original laser beam;
~~passing the laser beam through selecting~~ an optical fiber, the optical fiber having a pre-determined graded index ~~core~~ profile and a pre-determined length selected to modify the laser beam to a modified laser beam having an intensity distribution corresponding substantially to a Gaussian intensity distribution; **and**
coupling the laser beam to the selected graded index optical fiber to control a resultant intensity distribution to be applied to the human body by modifying the coupled laser beam
based on the pre-determined graded index and the pre-determined length of the optical fiber; and
applying the modified laser beam to the human body.

18. (Original) The method of claim 17 wherein the laser beam includes a wavelength of approximately 2.1 μm .

19. (Original) The method of claim 17 wherein the laser beam includes a wavelength of approximately 1.06 μm .

20. (Original) The method of claim 17 wherein the modified laser beam is applied directly to the human body.

21. (Original) The method of claim 17 comprising ablating the human tissue.

22. (Original) The method of claim 17 comprising passing the laser beam through a lens.

23. (Original) The method of claim 17 wherein the modified laser beam has a substantially bell curve shaped intensity distribution.

24. (Original) The method of claim 17 comprising modifying the laser beam in a graded index optical fiber.

25. (Original) The method of claim 17 wherein the optical fiber has a core diameter of approximately between 150 and 1000 micrometers.

26. (Currently amended) A method of treating the human body, the method comprising:

producing electromagnetic radiation;
passing electromagnetic radiation through selecting an optical fiber, the optical fiber having a pre-determined continuously variable refractive index profile when measured from the center of the optical fiber to the edge of the optical fiber, the continuously variable refractive index profile and a pre-determined length of the optical fiber selected to modify the electromagnetic radiation to a modified output electromagnetic radiation having an intensity distribution including one of a substantially Gaussian intensity distribution, a substantially bell curve shaped intensity distribution, a substantially parabolic intensity distribution and a substantially Lorentzian intensity distribution, the optical fiber outputting the modified electromagnetic radiation; and

coupling the electromagnetic radiation to the selected graded index optical fiber to control a resultant intensity distribution to be applied to the human body by modifying the coupled electromagnetic radiation based on the pre-determined graded index and the pre-determined length of the optical fiber; and

applying the modified electromagnetic radiation to the human body.

27. (Original) The method of claim 26 wherein the electromagnetic radiation is a laser beam.

28. (Original) The method of claim 26 wherein the electromagnetic radiation has a wavelength of approximately 2.1 μm .

29. (Original) The method of claim 26 wherein the electromagnetic radiation has a wavelength of approximately 1.06 μm .

30. (Original) The method of claim 26 comprising ablating the human tissue.

31. (Cancelled)

32. (Cancelled)

33. (Previously presented) The method of claim 26 wherein the modified electromagnetic radiation has an intensity profile which is more rounded than that of the electromagnetic

radiation input to the fiber such that the intensity profile of the modified electromagnetic radiation is greater at positions closer to the center of the fiber than at positions farther from the center of the fiber.

34. (Original) The method of claim 26 wherein the optical fiber has a core diameter of approximately between 150 and 1000 micrometers.

35. (Currently amended) A device for producing laser treatment for medical application on the human body, the device comprising:

an illumination source to produce electromagnetic radiation; and
a graded index optical fiber having a pre-determined graded index core profile and a pre-determined length selected to modify the electromagnetic radiation coupled to the optical fiber to a modified electromagnetic radiation having an a resultant intensity distribution including one of a substantially Gaussian intensity distribution, a substantially bell curve shaped intensity distribution, a substantially parabolic intensity distribution and a substantially Lorentzian intensity distribution.

36. (Previously presented) The device of claim 35 wherein said illumination source is a laser generator.

37. (Original) The device of claim 35 comprising a lens.

38. (Original) The device of claim 35 comprising a second optical fiber.

39. (Original) The device of claim 35 wherein the illumination source is a CTH:YAG laser.

40. (Original) The device of claim 35 wherein the illumination source is a Ho:Yag laser.

41. (Original) The device of claim 35 wherein the illumination source produces at least a wavelength of approximately 2.1 μ m.

42. (Original) The device of claim 35 wherein the illumination source produces at least a wavelength of approximately 1.06 μ m.

43. (Original) The device of claim 35 comprising a second optical fiber.
44. (Cancelled)
45. (Cancelled)
46. (Previously presented) The device of claim 35 wherein the modified electromagnetic radiation outputted from the graded index optical fiber has an intensity profile which is more rounded than that of the electromagnetic radiation input to the graded index optical fiber such that the intensity profile of the modified electromagnetic radiation is greater at positions closer to the center of the fiber than at positions farther from the center of the fiber.
47. (Original) The device of claim 35 wherein the optical fiber has a core diameter of approximately between 150 and 1000 micrometers.
- 48.-51. (Cancelled)